WHAT IS CLAIMED IS:

1. A combination antenna arrangement for the reception of at least two wireless communication services comprising;

a first antenna (14) designed to have a closely tolerated directional diagram for an assigned frequency range (6) for the reception of a first wireless communication service, and having at least one radiation part (20) coupled to an antenna connection point (22);

at least a second antenna (15) having a plurality of spaced-apart conductor parts (3) for reception of an additional wireless communication services (2) with an assigned frequency range (9), and radiation-coupled with said at least one conductor part (20) of said first antenna (14), said conductor parts (3) of said second antenna (15) being divided into segments (4) defining interruption points (10) therebetween, the greatest dimension (5) for each segment (4) being selected to be smaller than 3/8 of the wavelength λ for the frequency range (6) of the first wireless communication service (1); and,

a plurality of low loss frequency-dependent reactance circuits (8) bridging said interruption points (10) in order for the combination antenna arrangement to function, said

circuits (8) having a sufficiently high impedance (7) in the frequency range (6) of the first wireless communication service (1), and an impedance (7) that is preselected for proper functioning in the frequency range (9) of the additional wireless communication services (2).

2. The combination antenna arrangement according to Claim 1 wherein the dimensions (5) of said segments (4) are selected to be sufficiently small so that the closely predetermined tolerances of the direction diagram for the first wireless communication service (1) are not exceeded.

3. The combination antenna arrangement according to Claim 1 comprising a further reactance circuit (8') located outside of the radiation field of the antenna, coupled to one of said antenna segments (4) so that a sufficiently high impedance (7) is present for the frequency range (6) of the first wireless communication service (1) at the point of the segment (4) to be connected, and a sufficiently low-ohm impedance (7) is present for the frequency ranges (9) of said additional wireless communication services (2).

4. The combination antenna arrangement according to Claim 3 wherein said segments (4) are linear parts of the combination antenna arrangement, the width (11) of the interruption points (10) being selected to be small in comparison with the length (5) of the each of said segments (4), and said reactance circuits (8) being designed so that their impedance (7) have the frequency response of a parallel resonance circuit (16) in the frequency range (6) of the first wireless communication service (1).

5. The combination antenna arrangement according to Claim 3, wherein said segments (4) are flat parts of the combination antenna arrangement, the width (11) of the interruption points (10) being selected to be small in comparison with the dimension (5) of said segments (4), and said low loss reactance circuits (8) are designed so that the impedance (7) active between said interruption points (10), has the frequency response of a parallel resonance circuit (16) in the frequency range (6) of the first wireless communication service (1).

6. A combination antenna arrangement for a first wireless communication service (1) having a frequency bandwidth (13) and several additional wireless communication services (2) comprising;

a separate first antenna (14) for the first wireless communication service (1) having the frequency bandwidth (13);

one or more additional linear antennas (15) having a monopole design having spaced apart segments (3) with interruption points (10) therebetween, for additional wireless communication services (2); and

reactance circuits (8) designed as parallel resonance circuits (16), the resonance frequency of which is tuned approximately to the average frequency of the frequency range (6) of the first wireless communication service (1), and having dummy elements selected so that the impedance (7) in effect between said interruption points (10) is sufficiently great, in each instance, over the frequency bandwidth (13), so that the closely predetermined tolerances of the directional diagram are not exceeded.

7. A combination antenna arrangement for the first wireless communication service (1) having the frequency bandwidth (13) and several additional wireless communication services comprising;

a separate first antenna (14) for receiving the first wireless communication service (1) having the frequency bandwidth (13);

a second antenna (15) disposed adjacent to said first antenna (14) and composed of flat conductors arranged in spaced apart segments for receiving additional wireless communication services (2); and

a plurality of reactance circuits (8) coupled between said antenna segments as parallel resonance circuits (16), the resonance frequency of which is tuned approximately to the average frequency of the frequency range (6) of the first wireless communication service (1), and having dummy elements selected so that their impedance (7), with respect to the capacitance between the edges of said antenna segments is sufficiently large, in each instance, over the frequency bandwidth (13), so that the closely predetermined tolerances of the directional diagram are not exceeded.

8. The combination antenna arrangement according to Claim 4, for a first wireless communication service (1) in the frequency range (6) and having an average frequency f_1 and an additional wireless communication service (2) having the frequency range (9) and the average frequency f_2, wherein said reactance circuits (8) comprise;

three dummy elements, so that the reactance of said reactance circuits (8) has a pole in the frequency range (6) of the first wireless communication service (1), and a zero position in the frequency range (9) of the additional wireless communication service (2), and wherein said reactance is sufficiently large in the frequency range (6) of the first wireless communication service (1), and sufficiently small in the frequency range (9) of the additional wireless communication service (2).

9. The combination antenna arrangement according to Claim 4, for a first wireless communication service (1) in the frequency range (6) and having the average frequency f_1, and a first additional wireless communication service (2a) and a second additional wireless communication service (2b) having a first additional and a second additional frequency

range (9a, 9b) and the average frequencies $f_{2a'}$, $f_{2b'}$, whereby $f_{2a} < f_1 < f_{2b'}$ wherein said reactance circuits (8) comprise four dummy elements arranged so that the reactance of the reactance circuit (8) had a pole in the frequency range (6) of the first wireless communication service (1), and a zero position, in each instance, in the frequency ranges (9a, 9b) of the additional wireless communication services (2a, 2b), and that the reactance is sufficiently large, in the frequency range (6) of the first wireless communication service (1), and sufficiently small in the frequency ranges (9a, 9b) of the additional wireless communication service (2a, 2b).

10. The combination antenna arrangement according to Claim 4, for a first wireless communication service (1) in the frequency range (6) and having the average frequency f_1, and a first additional wireless communication service and a second additional wireless communication service (2a, 2b) having the first frequency range (9a) of the additional wireless communication service (2a) and the second frequency range (9b) of the second additional communication service (2b) and the average frequencies $f_{2a'}$ and $f_{2b'}$ whereby f_{2a} and

f_{2b} are both greater than, or both smaller than f_1, wherein said reactance circuit (8) comprises five dummy elements, so that the reactance of said reactance circuit (8) has a pole in the frequency range (6) of the first wireless communication service (1), and a zero position, in each instance, in the frequency ranges (9a, 9b) of the additional wireless communication services (2a, 2b), and that a pole position is formed between the first and the second frequency range (9a, 9b) of the first additional and the second additional wireless communication service (2a, 2b), the frequency and said dummy elements being selected so that the reactance is sufficiently large, in the frequency range (6) of the first wireless communication service (1), and sufficiently small in the frequency ranges (9a, 9b) of the additional wireless communication service (2a, 2b).

11. The combination antenna arrangement according to Claim 6 wherein said first antenna (14) is used for satellite radio reception according to the SDARS standard as the first wireless communication service (1), and said additional antennas (15) are used for reception according to the AMPS and PCS standard as a first additional wireless communication

service and a second additional wireless communication service (2a, 2b), wherein said additional antennas (15) for the first additional and the second additional wireless communication service (2a, 2b) comprises a combined antenna having the design of a vertical monopole, supplied at the bottom and, having a roof capacitor, over a conductive surface, and having two interruption points (10) of which the first is formed in the vicinity of the bottom end of the monopole and the second is formed at about 2/3 of the height of the monopole, and said reactance circuits (8) are constructed as a parallel resonance frequency at about the average frequency f_1 of the frequency range (6) of the first wireless communication service (1), and the inductance of the parallel resonance circuit (16) at the bottom interruption point (10) for the frequency range of the first additional wireless communication service (2a) in the AMPS frequency range is selected to be sufficiently small, and the inductance of the parallel resonance circuit at the top interruption point (10) for the frequency range of the second additional wireless communication service (2a) in the PCS frequency range is selected to be larger so that the top part of the antenna is active in the lower AMPS frequency range,

but is essentially inactive in the PCS range having a higher frequency.

12. The combination antenna arrangement according to Claim 7 wherein said first antenna (14) is used for satellite radio reception according to the SDARS standard as the first wireless communication service (1), and said additional antennas (15) are used for reception according to the AMPS and PCS standard as a first additional wireless communication service and a second additional wireless communication service (2a, 2b), wherein said additional antennas (15) for the first additional and the second additional wireless communication service (2a, 2b) comprises a combined antenna having the design of a vertical monopole, supplied at the bottom and, having a roof capacitor, over a conductive surface, and having two interruption points (10) of which the first is formed in the vicinity of the bottom end of the monopole and the second is formed at about 2/3 of the height of the monopole, and said reactance circuits (8) are constructed as a parallel resonance frequency at about the average frequency f_1 of the frequency range (6) of the first wireless communication service (1), and the inductance of the

parallel resonance circuit (16) at the bottom interruption point (10) for the frequency range of the first additional wireless communication service (2a) in the AMPS frequency range is selected to be sufficiently small, and the inductance of the parallel resonance circuit at the top interruption point (10) for the frequency range of the second additional wireless communication service (2a) in the PCS frequency range is selected to be larger so that the top part of the antenna is active in the lower AMPS frequency range, but is essentially inactive in the PCS range having a higher frequency.

13. The combination antenna arrangement according to Claim 1 wherein said first antenna (14) receives satellite radio reception according to the SDARS standard as the first wireless communication service (1) and said at least one second antenna (15) receives the AMPS and PCS standard as additional wireless communication services (2a, 2b), wherein said the first antenna (14) receiving the SDARS standard is configured as an antenna on an essentially horizontal conductive surface, having rotational symmetry with reference to its vertical center line, and having a vertical combined

monopole configured in its center line, for the AMPS standard as a first additional wireless communication service (2a) and the PCS standard as a second additional wireless communication service (2b), and said reactance circuits (8) are inserted into said interruption points (10) in said monopole.

14. The combination antenna arrangement according to Claim 13 wherein said monopole is formed with a roof capacitor, and said interruption point (10) having a reactance circuit (8) for selective separation of the monopole in the SDARS frequency range is present in the vicinity of the top end of the monopole.

15. The combination antenna arrangement according to Claim 13 wherein said the roof capacitor is essentially configured with rotational symmetry relative to the monopole, and that interruption points (10) comprise radially guided slits, the slit width of which is selected to be sufficiently large so that the impedance (7) thereby resulting from the edges of the slits is sufficiently large for the SDARS frequency.

16. The combination antenna arrangement according to Claim 1 wherein said second antenna (15) comprises a AM/FM monopole antenna consisting of a continuous wire conductor (25) disposed over the length of a rod shaped flexible support with a length necessary for AM/FM reception, and disposed in close proximity of said first antenna (14) for the first wireless communication service (1), said conductor (25) being formed into spiral-shaped or meander-shaped coils (24) disposed at the necessary distances from one another, wherein said coils (24) are configured so that suitable parallel resonance circuits (16) result from their inductance together with their inherent capacitance, said conductor (25) being configured so that the antenna has sufficiently high impedance for the frequency range (6) of the first wireless communication service (1).